Sharing the Vision

Johnson Space Center employees strive every day to deliver NASA's message of exploration to the community, the country and the world. Here are just a few of the creative ways that JSC is sharing the Vision.

NASA's Digital Learning Network brings space back to school

By JSC's Education and Student Program's Branch

LeAnne Torney's class in Titonka, Iowa, recently visited Johnson Space Center. While the students' experience was engaging and interactive, they didn't arrive in Texas on a school bus and didn't even have to pack a lunch. Instead, they visited NASA via the Houston hub of the Agency's Digital Learning Network (DLN).

It was "a wonderful educational experience for my students," Torney said. "It gave them the opportunity to improve communication skills and teamwork skills…as well as relate science content to everyday life."

Using videoconferencing technology, NASA has been reaching out to students and teachers via two-way audio and video connections for years. Each year, various NASA centers combine to produce hundreds of live interactive events with schools around the country, directly impacting thousands of students. When webcasting tools are added, even more students participate in these virtual experiences.

NASA's Office of Education is now working to enhance these existing videoconferencing and webcasting capabilities through the creation of the DLN. The new network will use more powerful and flexible Agencywide connectivity tools, stronger organizational relationships and shared content to broaden NASA's reach in the educational community and improve the products and services delivered.

"With JSC's DLO, our education events typically focused on human spaceflight since that is what our Center specializes in," said Doug Goforth of JSC's Education Office. "But with the new DLN, all the Centers can work together to reach students in a way that's more in line with the One NASA approach."

Through the network and NASA's other assets, an educator at NASA's Glenn Research Center in Ohio, connected to three schools for a virtual field trip, could share live imagery of astronauts training underwater in Houston or a new aircraft in wind-tunnel testing in Virginia. With minimal overhead, that educator could also enhance a robotics lesson by including a NASA expert live from California.

The DLN is an important step to supporting the changing needs of NASA's education customers and keeping the Agency on the forefront in use of this technology as an education tool. It will truly strengthen NASA's ability to inspire the next generation of explorers through interactive digital experiences, utilize NASA's newly strengthened Web assets at www.nasa.gov and present "One NASA" to students, educators and the general public.

NASA Brain Bites

Does your brain need a snack? If so, go find a NASA Brain Bite. This new series aims to give hungry minds a little something to munch on.

"Brain Bites are short videos that answer a frequently asked question or cover an interesting topic related to something NASA does," Dan Carpenter, Director of Public Affairs, said. "We're trying to target it to the 13- to 18-year-old level, as well as general public audiences."

"Through NASA Brain Bites, we also hope to build a long-term relationship with the viewer by encouraging them to visit the NASA portal at www.nasa.gov," Carpenter said.

Brain Bites have included such topics as "How do you turn a bolt in space?" and "How is an astronaut like an air-hockey puck?" Each "bite" is accompanied by grade-appropriate links to related topics – for those whose brains are still hungry.

"What we're trying to do is show kids that rocket science is based on solid and simple scientific principles that they can apply themselves – that the things they're learning in school are applicable, even to rocket science," said Tim Allen, Television Producer with Media Services Corporation. Allen produces some of the video segments and helps identify topics for future Brain Bites.

Allen said that future Brain Bites could answer questions such as "Why do astronauts train underwater? What's a launch window? What would I weigh on Mars? What time is it in space?"

Visit Brain Bites at spaceflight.nasa.gov/brainbite.

Rocket Science at Home

Rocket Science at Home (RSAH), an offshoot of NASA Brain Bites, is designed to help kids explore rocket science. An impossible task? Not really – as the RSAH Web site puts it, "Rocket science is really just basic principles working together."

"We hope that kids will use it as a stepping-stone to exploring science on their own," Phil West said. West worked on this outreach project while working in JSC's Public Affairs Office and now serves as JSC's Deputy Education Director. "Kids might not beg Mom and Dad to do a 'lesson plan' on Saturday morning, but they might want to build something in the garage. This can be a less intimidating, more friendly way to explore a concept."

The current RSAH experiment focuses on hovercraft. The simpler version of the experiment involves creating a tabletop hovercraft with a compact disc and a balloon, while the more advanced version helps kids – with adult supervision – make a craft they can actually ride. Both are hands-on physics lessons that stem from the Brain Bite about NASA's Precision Air-Bearing Facility.

Future RSAH modules will stem from corresponding Brain Bites. Visit RSAH at spaceflight.nasa.gov/brainbite/rocketscience.

In May, K-12 students at three schools on the Turtle Mountain Indian Reservation (TMIR) in North Dakota had the opportunity to interact with Astronaut John Herrington (shown here with IMPASS Education Specialist Sherri Jurls) using JSC distance learning technology. In cooperation with Turtle Mountain Community College, NASA installed videoconferencing systems in these tribal schools on the reservation.

Prior to this event, the TMIR was featured in an episode of the NASA CONNECT television show entitled "The Wright Math" that aired nationally on PBS stations in October 2002. Herrington appeared in an introductory segment at the beginning of the program. As a follow-up to the show, JSC employees coordinated with Bob Starr, Manager of the Digital Media Lab at Langley Research Center, to have the same students from the program connect live with Herrington.

The event was "representative of the kind of cooperation needed to make the Digital Learning Network a reality," Starr said.

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Photos by Robert Markowitz

Astronaut Don Pettit, Expedition 6 NASA ISS Science Officer, uses a drill to perform in-flight maintenance in the Destiny laboratory on the ISS. Pettit is also demonstrating a physics concept featured in a NASA Brain Bite. The Brain Bite explains to students that turning a bolt in space is no easy feat: astronauts must steady themselves – as Pettit is doing – to avoid being spun by the drill in the microgravity environment.

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